FIG. 1

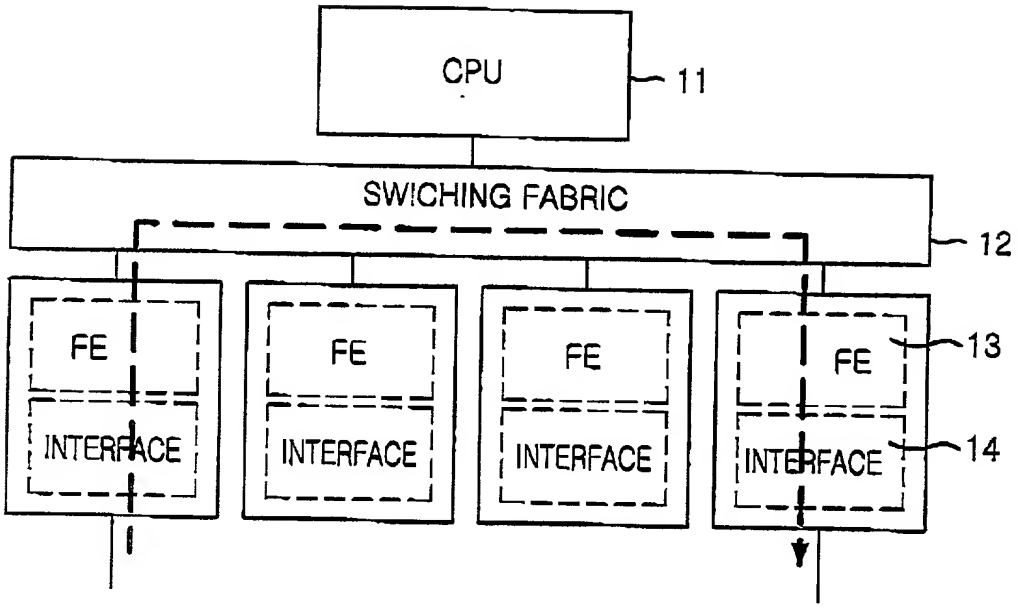

CPU
11
SWICHING FABRIC
12
FE
INTERFACE
FE
INTERFACE
FE
INTERFACE
FE
INTERFACE
13
14

FIG. 2

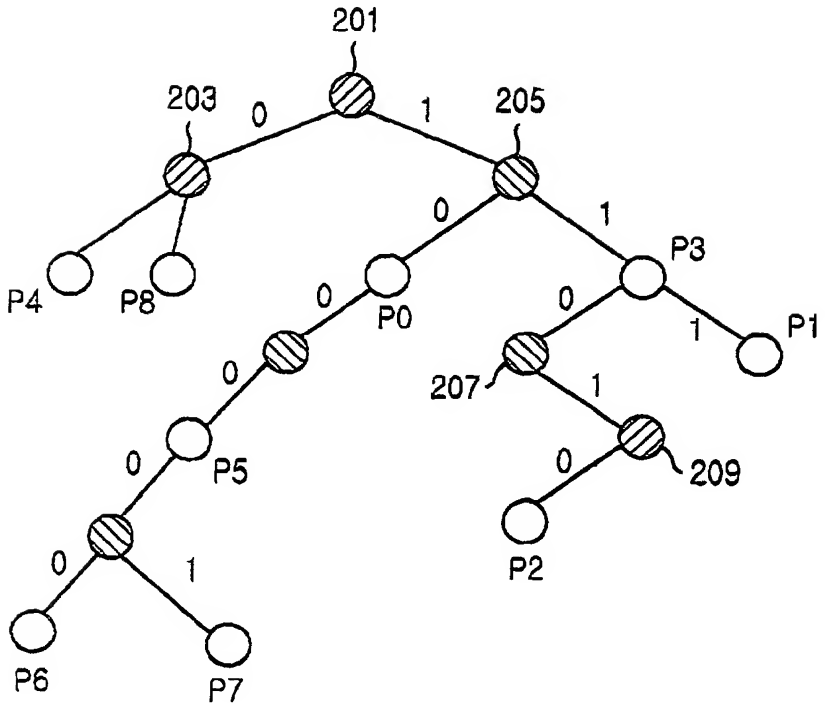


FIG. 3

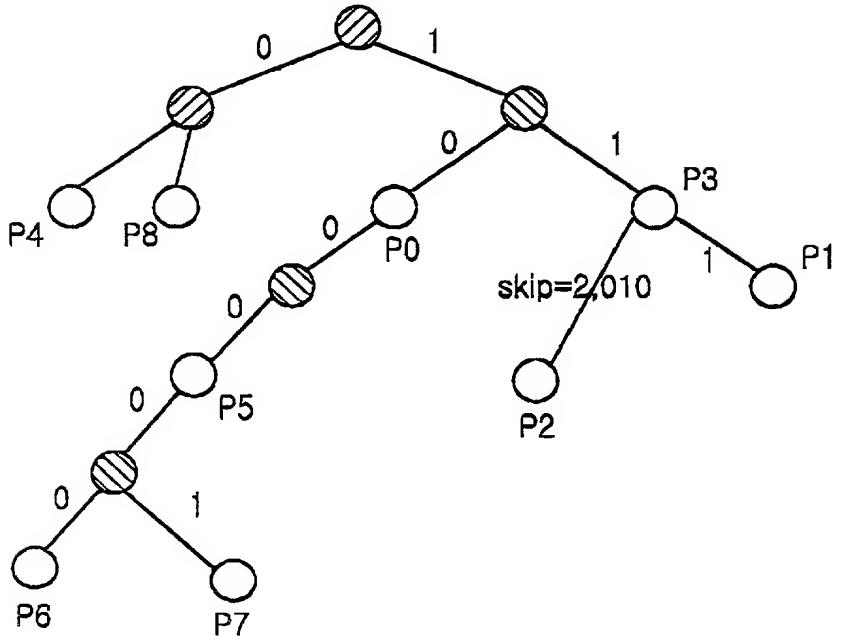

0
1
0
1
P4
P8
0
P0
P3
skip=2,010
1
P1
0
0
P5
P2
0
1
P6
P7

FIG. 4

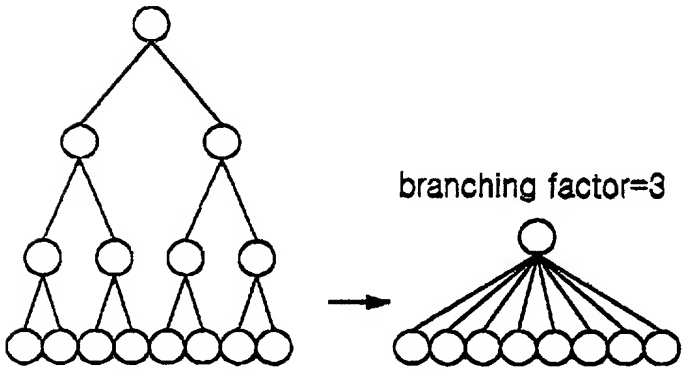

branching factor=3

FIG. 5

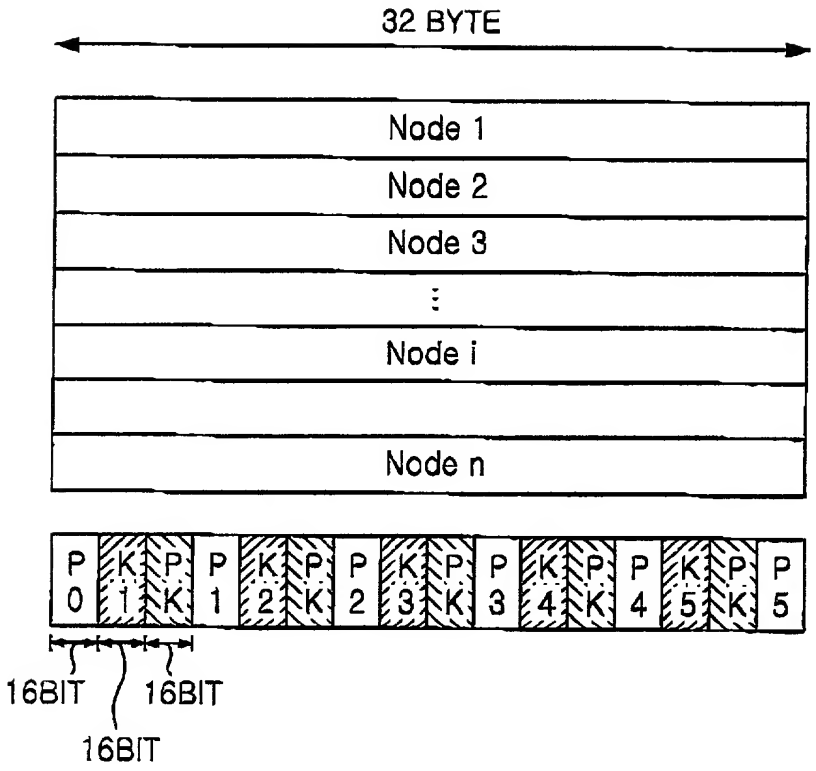

32 BYTE
Node 1
Node 2
Node 3
Node i
Node n
P0 K1 PK P1 K2 PK P2 K3 PK P3 K4 PK P4 K5 PK P5
16BIT
16BIT
16BIT

FIG. 6

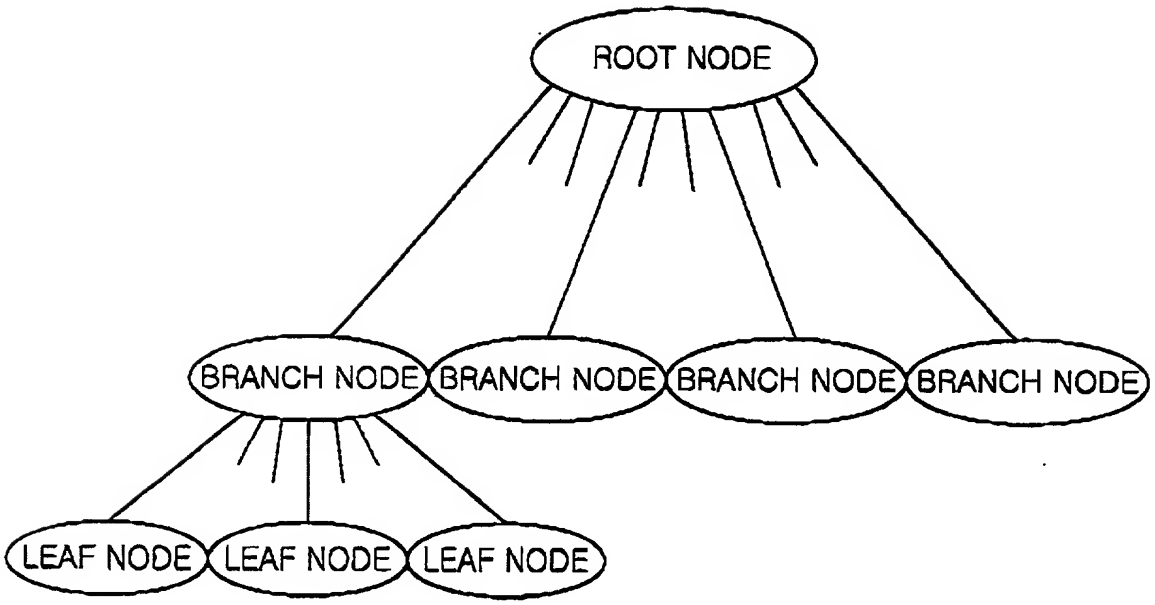

ROOT NODE
BRANCH NODE
BRANCH NODE
BRANCH NODE
BRANCH NODE
LEAF NODE
LEAF NODE
LEAF NODE

FIG. 7

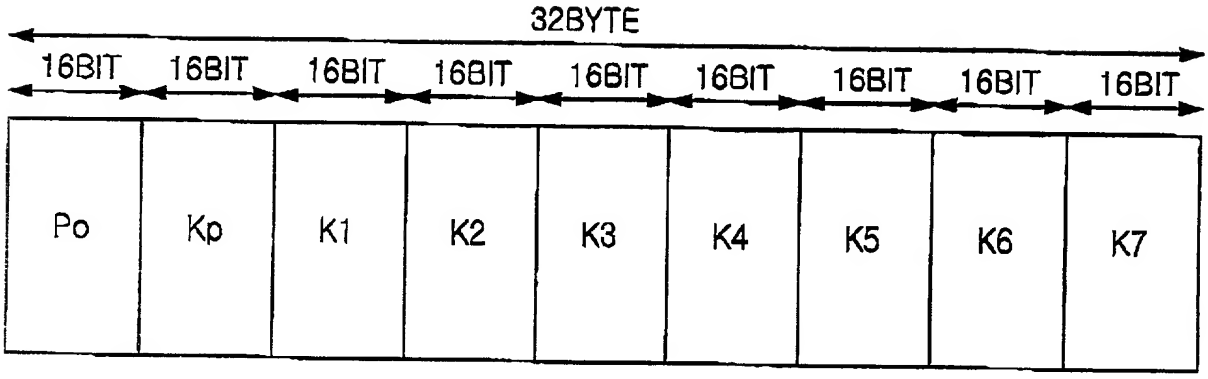

32BYTE
16BIT
16BIT
16BIT
16BIT
16BIT
16BIT
16BIT
16BIT
16BIT
Po
Kp
K1
K2
K3
K4
K5
K6
K7

FIG. 8

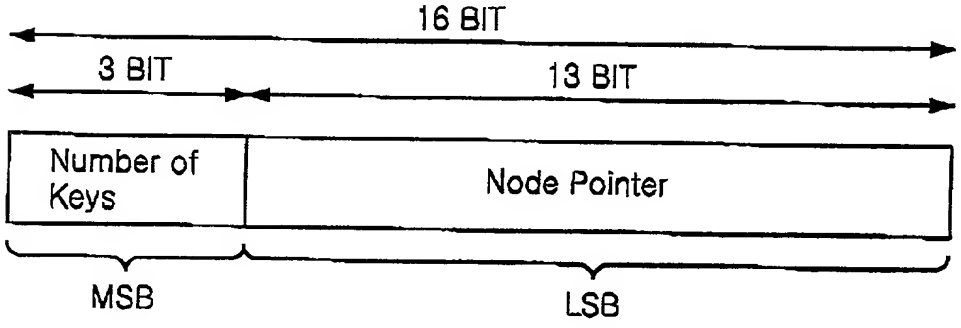

16 BIT
3 BIT
13 BIT
Number of Keys
Node Pointer
MSB
LSB

FIG. 9A

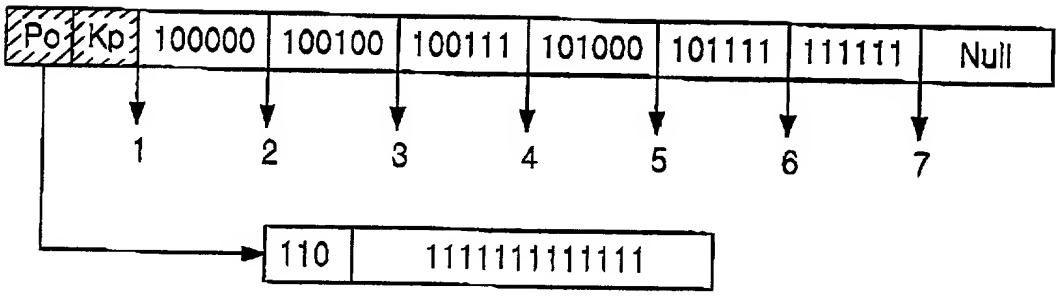

Po
Kp
100000
100100
100111
101000
101111
111111
Null
1
2
3
4
5
6
7
110
1111111111111

FIG. 9B

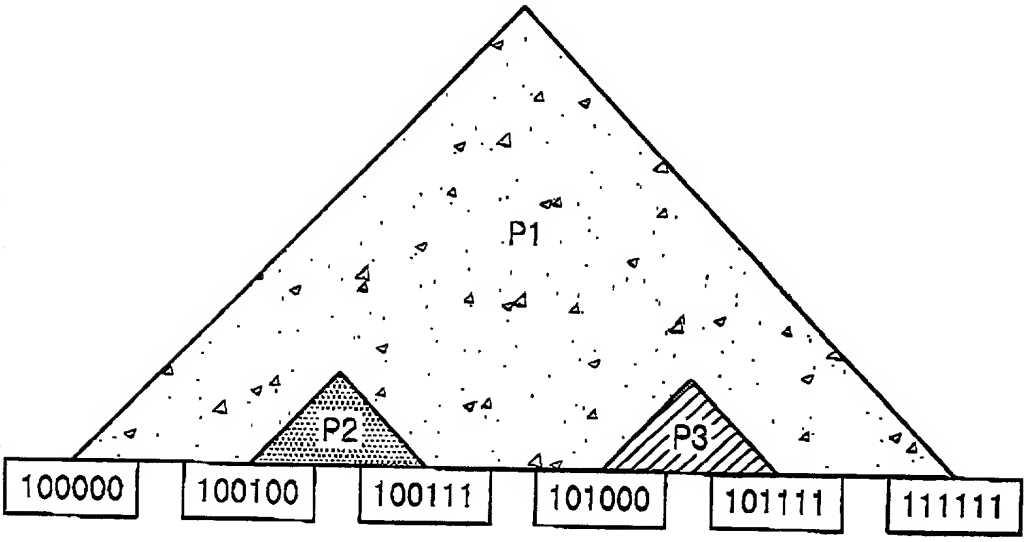
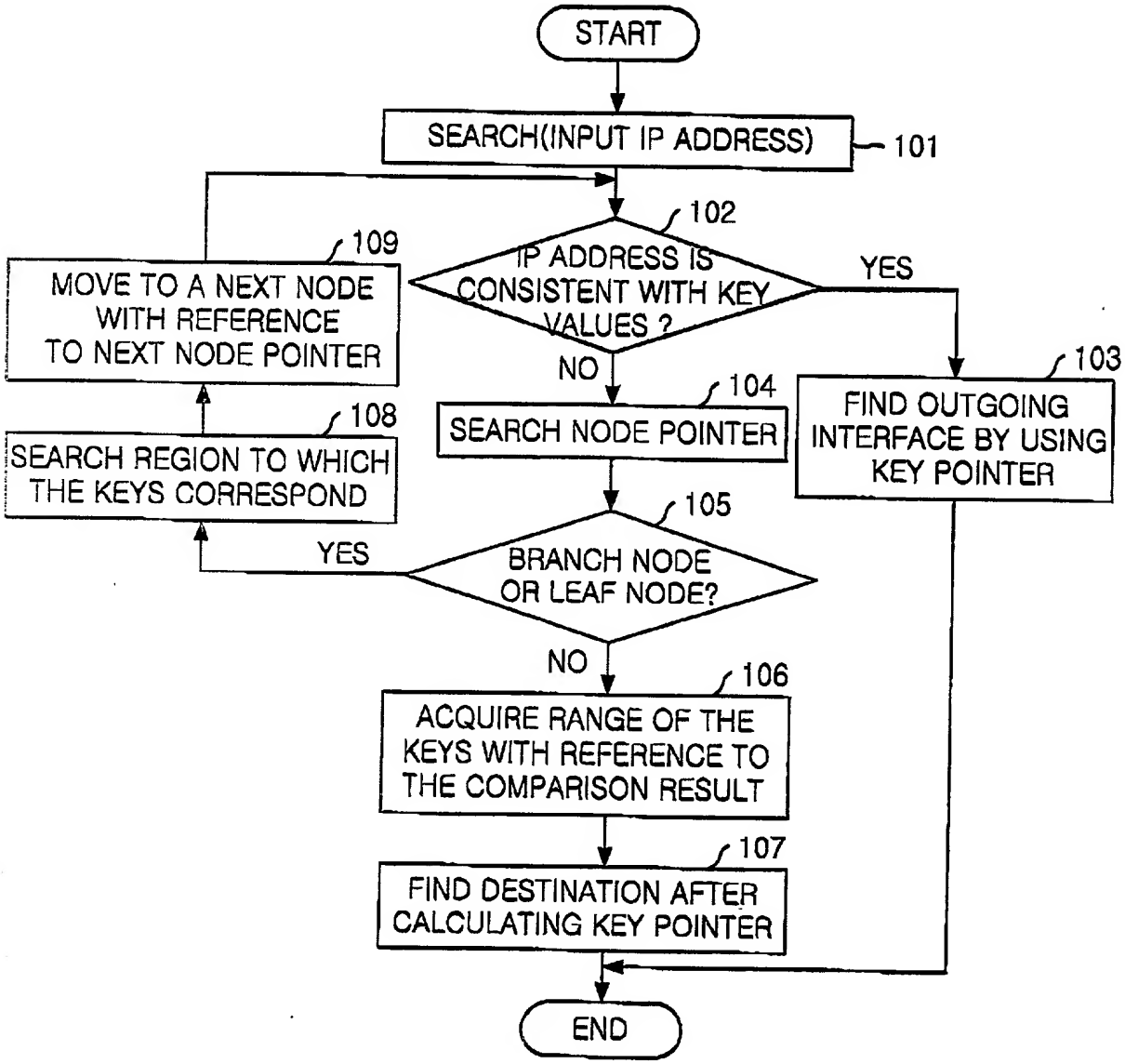

P1
P2
P3
100000
100100
100111
101000
101111
111111

FIG. 10


START
SEARCH(INPUT IP ADDRESS)
101
102
IP ADDRESS IS CONSISTENT WITH KEY VALUES ?
YES
NO
103
FIND OUTGOING INTERFACE BY USING KEY POINTER
104
SEARCH NODE POINTER
105
BRANCH NODE OR LEAF NODE?
YES
NO
106
ACQUIRE RANGE OF THE KEYS WITH REFERENCE TO THE COMPARISON RESULT
107
FIND DESTINATION AFTER CALCULATING KEY POINTER
108
SEARCH REGION TO WHICH THE KEYS CORRESPOND
109
MOVE TO A NEXT NODE WITH REFERENCE TO NEXT NODE POINTER
END